

sec 5

~~sheet~~ Compiler

sheet 4

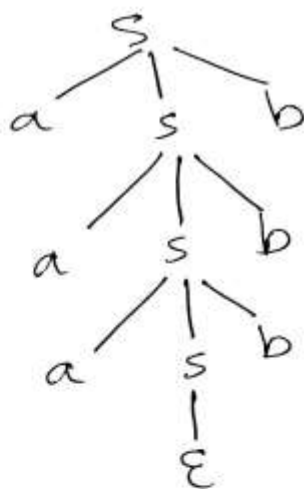
[8]

a. $a^x b^y$ $x=y$

~~sequence of a's~~

sequence of b's • seq. of a's ←

⇒ $S \rightarrow asb| \epsilon$

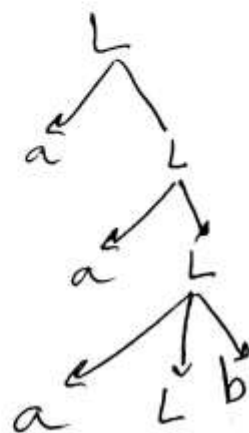


b) $a^x b^y$ $x \geq y$

↳ no. of a's more than no. of b's

$S \rightarrow aL$

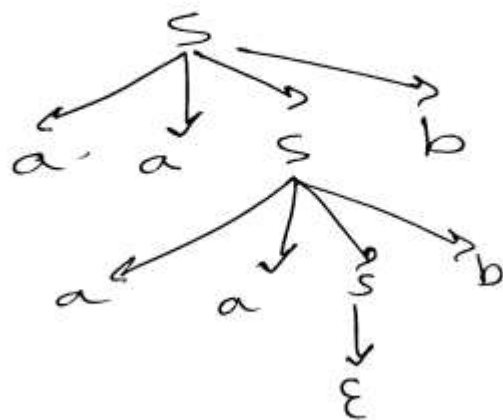
$S \rightarrow aLb| \epsilon | aL$



[1]

c) $x = 2y$

$s \rightarrow aasb | \epsilon$



d) $a^x b^y a^z$

$Z = X + Y$

$aa \not\models Z = X \not\models Y \Rightarrow$ $\exists \text{ (string) } x, y, z$

$ba \not\models Z = Y \not\models X \Rightarrow$ " " "

abaa

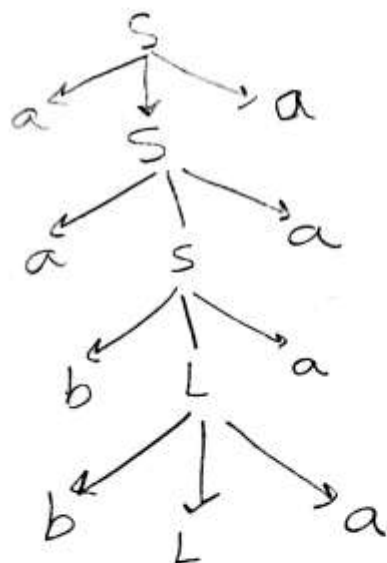
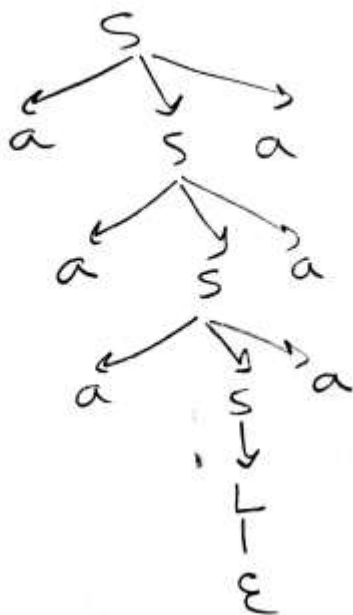
aabaaa

aabbaaaa

$s \rightarrow asa | L$

$L \rightarrow bLa | \epsilon$

\Rightarrow



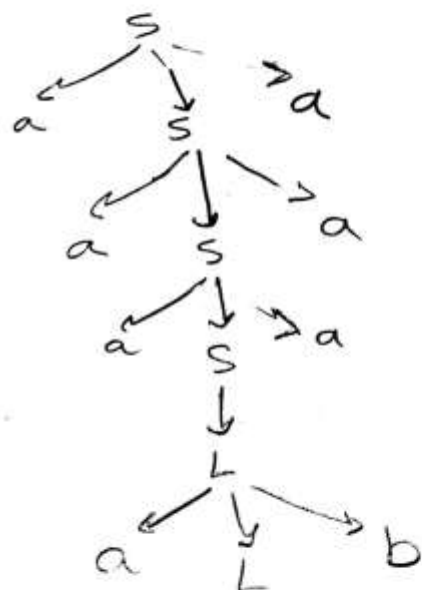
$\boxed{2}$

$$a^x b^y a^z$$

$$Z = x - y$$

 $2 - 1 = 1$
$$aa \leftarrow Z=x \leftarrow y=0$$
$$ab \leftarrow x=y \leftarrow z=0$$

aba

$$S \rightarrow aSa \mid L$$
$$L \rightarrow aLb \mid \epsilon$$


\boxed{g} a, b, c
sand \$

~~S and S~~
S \rightarrow S and S | true

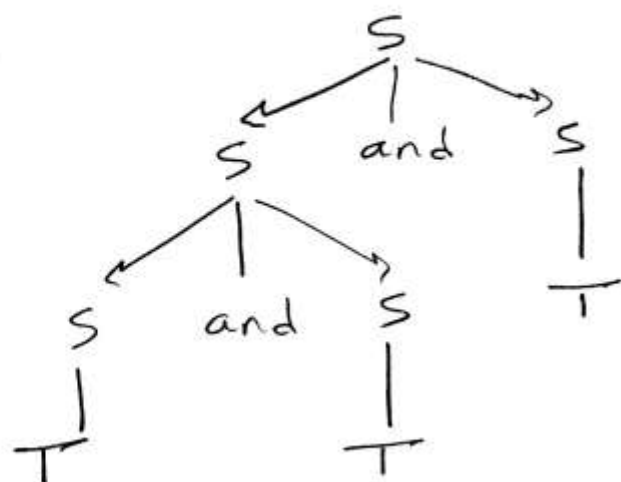
true and true and true

i- $S \rightarrow S$ and $S \Rightarrow S \rightarrow S$ and S and S

\Rightarrow true and s and s \Rightarrow true and true

and $s \Rightarrow \text{true}$ and true and true

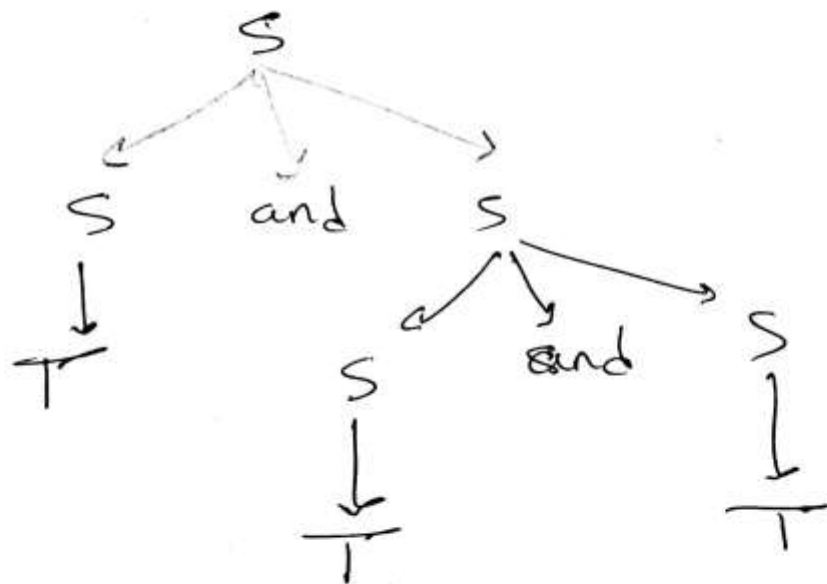
↳ derivation. (left most)



Left
Associative

2) $S \rightarrow S \text{ and } S \Rightarrow S \rightarrow \text{true and } S$
 $\Rightarrow \text{true and } S \text{ and } S \Rightarrow \text{true and true}$
 $\text{and } S \Rightarrow \text{true and true and true}$
 $\hookrightarrow (\text{left most})$

Right
associative



3) $S \rightarrow S \text{ and } S \Rightarrow S \text{ and } \overline{T \text{ and } S} \Rightarrow$

$S \text{ and } S \text{ and } T \Rightarrow S \text{ and } \text{true and True}$
 $\Rightarrow \text{true and true and true}$

\hookrightarrow right most

4) $S \rightarrow S \text{ and } \Rightarrow S \text{ and } S \text{ and } S$

$\Rightarrow S \text{ and } S \text{ and } T \Rightarrow S \text{ and } T \text{ and } T$

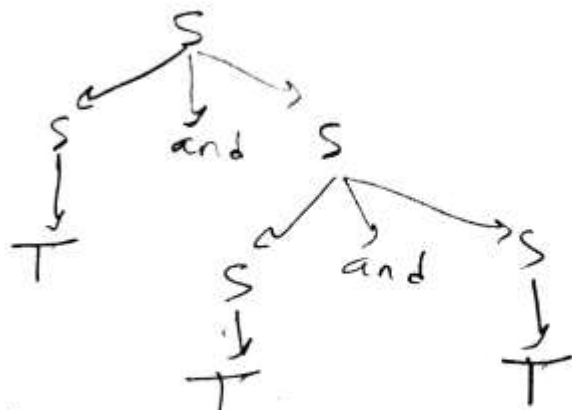
$\Rightarrow T \text{ and } T \text{ and } T$

\hookrightarrow right most

(derivations) يوجد بخاصة لا كثيرة لا

ليس هذا (2-large tree) ليس جيداً.

d) (Precedence) إلى أن تنفيذ الأول



$T \text{ and } (T \text{ and } T)$ هذا الأول

5

10

$S \rightarrow S \text{ and } S \mid S \text{ or } S \mid \text{true}$

$\rightarrow \text{true and true or true}$

a). b)



لها أولوية أعلى and

أو لها أولوية أعلى

c) $S \rightarrow S \text{ or } S \mid L$

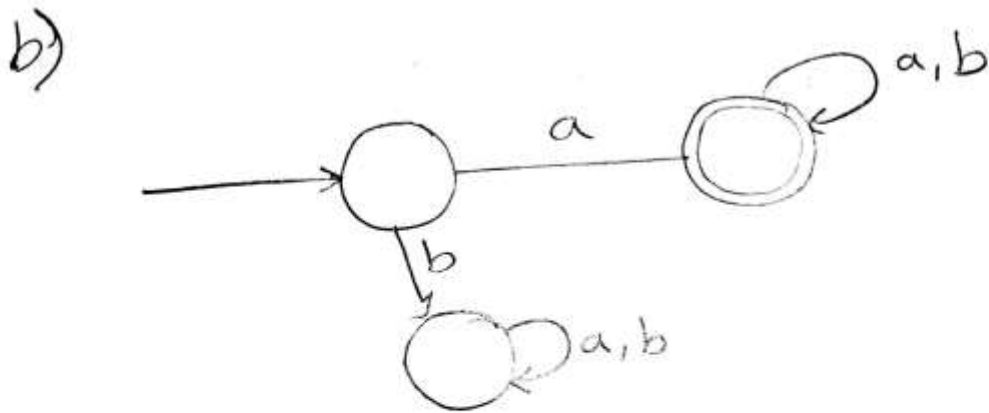
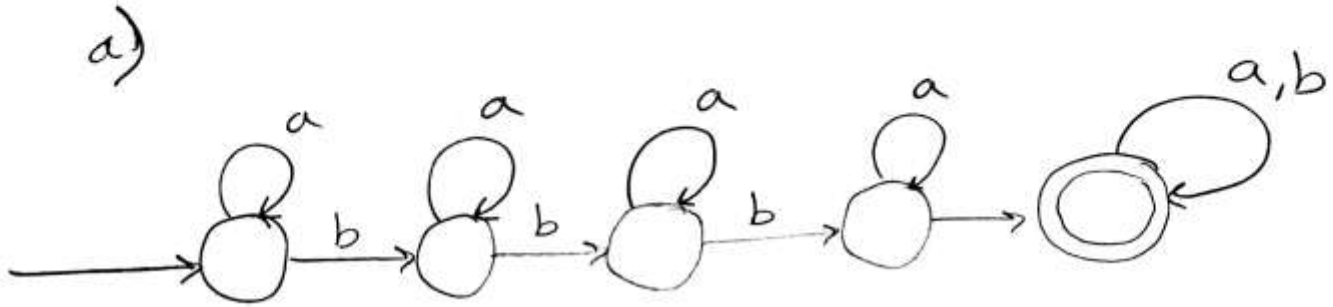
$L \rightarrow \text{true and } L \mid \text{true}$

مع أننا أجبرنا أنه ينبغي أن (and)

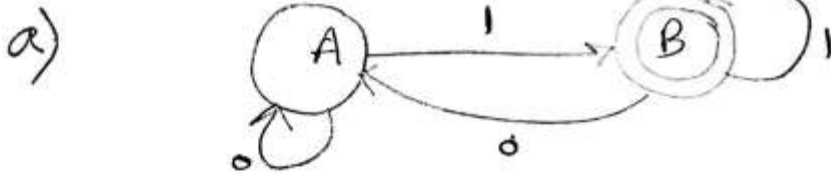
لها أولوية أعلى من (or).



quiz sol



2



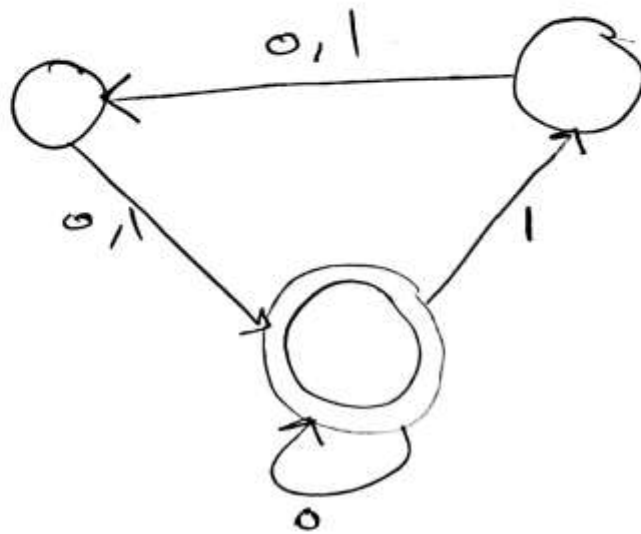
Solutions

① $(0/1)^*1$

② $0^*1(1/0^+1)^*$

③

b)



$$(0+1)(0/1(0+1)(0+1))^*$$

b)